



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

SCIENCE

A Weekly Journal devoted to the Advancement of Science, publishing the official notices and proceedings of the American Association for the Advancement of Science, edited by J. McKeen Cattell and published every Friday by

THE SCIENCE PRESS

11 Liberty St., Utica, N. Y. Garrison, N. Y.
New York City: Grand Central Terminal

Annual Subscription, \$6.00 Single Copies, 15 Cts.

Entered as second-class matter January 21, 1922, at the Post Office at Utica, N. Y., Under the Act of March 3, 1879.

VOL. LVI SEPTEMBER 22, 1922 No. 1447

CONTENTS

<i>The Department of Medicine at the Peking Union Medical College:</i> DR. FRANCIS W. PEABODY	317
<i>A First Course in General Chemistry:</i> DR. WILHELM SEGERBLUM.....	320
<i>The Physico-chemical Mechanism of Mutation and Evolution:</i> DR. JEROME ALEXANDER....	323
<i>Scientific Events:</i>	
<i>Animal Experiments in Great Britain; Report of the Engineering Council on Work-Periods; Science Section of the Association of College and Preparatory Schools of the Middle States and Maryland; The Herschel Centenary Pilgrimage; The International Geological Congress</i>	326
<i>Scientific Notes and News</i>	330
<i>University and Educational Notes</i>	334
<i>Discussion and Correspondence:</i>	
<i>Tingitidæ or Tingidæ:</i> DR. W. J. HOLLAND.	
<i>The Glaciation of the Cordilleran Region:</i> THOMAS LARGE. <i>A Suggestion to Zoogeographers:</i> EMMETT REID DUNN. <i>Clinkertill—A new Metamorphic Rock:</i> L. P. DOVE. <i>The Homing of a Dog:</i> W. D. HARRY.	334
<i>Quotations:</i>	
<i>Controlling Research Endowments</i>	339
<i>Scientific Books:</i>	
<i>Noyes and Sherrill's Advanced Course of Instruction in Chemical Principles:</i> PROFESSOR J. LIVINGSTON R. MORGAN.....	340
<i>Special Articles:</i>	
<i>Sand Drown, a Chlorosis of Tobacco:</i> DR. W. W. GARNER, J. E. McMURTREY, E. G. MOSS. <i>Transference of the Bean Mosaic Virus by Macrosiphum solanifolii:</i> RAY NELSON. <i>The Extension of the X-ray into the Ultraviolet Spectrum:</i> DR. OTTO STUHLMAN, JR.	341

THE DEPARTMENT OF MEDICINE AT THE PEKING UNION MEDICAL COLLEGE

THE introduction of western medicine into China has been due, thus far, largely to the therapeutic success of surgery and the various surgical specialties. Internal medicine has lagged a long distance behind surgery both in the attention which it has received in the mission hospitals and in the extent to which it has influenced the Chinese people. One frequently hears it said that the Chinese "like western surgery, but they do not care for western medicine," and a corollary is that for "internal disease" they prefer to rely on the native system of practice. The fact is, however, that our western internal medicine has not yet been given a fair chance to demonstrate its worth. Practitioners of western medicine in China—for the most part, of course, missionaries—have found themselves confronted by an enormous number of surgical problems, many of them presenting direct emergencies, and it is natural that these cases should have received the first attention. Traumatic injuries, infections and large superficial tumors can often be easily and quickly alleviated, and their cure produces a profound impression on the patient and on his friends, but the diagnosis and treatment of strictly medical diseases is much more time consuming and the results are usually far less obvious and striking. With the days so full of pressing surgical problems and with the frequent lack of the facilities for modern medical diagnosis, it is not surprising that, with few exceptions, the medical patients have received somewhat scant attention. Even among the lower classes the Chinese often manifest great power of discrimination and an appreciation of careful, thorough attention, and if western internal medicine is to make its way with them it must be presented in the best possible manner.

Under these circumstances, it is of interest to watch the development at the Peking Union Medical College of a medical clinic which in its personnel and equipment would take high rank on any continent.

The Peking Union Medical College moved into its new quarters in the summer of 1921, and the department of medicine, with its wards, laboratories, offices and out-patient department, is centralized in the hospital and directly connected with the buildings of the medical school proper. It thus has the great advantage of being organically connected with the laboratories of the preclinical sciences, so that close association between clinical and preclinical workers is facilitated. In addition, the department of medicine is only a few steps from the library, which contains a considerable and well selected assortment of books as well as files of all the more important scientific journals. The medical wards occupy three floors in a large pavilion and contain 75 beds, only about half of which are now in use, in large and small rooms. In addition, there is an emergency isolation ward of six beds, and there are also medical patients, both Chinese and foreign, in the private pavilion. The general arrangements of the wards are exactly similar to what one finds in the best modern hospitals in America.

The nursing is at present carried on by a staff of Chinese and foreign graduate nurses, with Chinese male nurses under a woman graduate in the male wards, but a nurses' training school, based on the highest American ideals and standards, has been established, which admits only women as pupils, and it is hoped that before long most of the ward work can be carried on by the pupil nurses. Connected with each medical ward is a laboratory for routine clinical examinations. Adjoining the medical wards, on the ground floor, is the medical out-patient department with its waiting room, laboratory, and about a dozen rooms for the examination and treatment of patients, while on the two floors above are the offices, laboratories and class rooms of the department of medicine. Ample quarters and complete equipment are here provided for special study and investigation by the members of the de-

partment. Adjoining the office of the professor of medicine, on the third floor, are laboratories devoted to chemistry; and next to the associate professor's office are the laboratories for bacteriology. Across the hall is the laboratory of neuropathology, and an ample suite of rooms for the electrocardiograph, which is, in addition, wired to all the wards in the hospital. On the second floor is the laboratory of clinical pathology, with a large room for class instruction and smaller rooms in which the bacteriology and serology for the hospital is carried out, other laboratories for special workers, and a spacious room for clinical demonstrations. All the members of the staff of the department of medicine devote their time exclusively to hospital work and teaching, and the staff is large enough to allow each one to have fairly adequate time for study and investigation. The professor of medicine and chief of the medical service of the hospital is Dr. F. C. McLean (M.D. Rush Medical School) and the associate professor is Dr. O. H. Robertson (M.D. Harvard Medical School), both of whom were formerly connected with the Rockefeller Institute. Dr. Andrew H. Woods (M.D. University of Pennsylvania), who was formerly on the staff of the Canton Christian College, is associate professor of neurology. The other members of the department are Dr. C. W. Young, Dr. J. H. Korn, Dr. H. J. Smyly and Dr. R. H. P. Sia. The house staff is organized with a resident physician, three assistant resident physicians (at present all Chinese graduates of American medical schools) and a group of interns who are for the most part graduates of medical schools in China. When the new Peking Union Medical College has been longer in existence the majority of the interns will be graduates of this school because a fifth, or intern year, is required for the degree. Since the standards of instruction of the school are analogous to those of the best institutions in America, the graduates will make highly satisfactory interns. In the year 1921-22 there were only three classes under instruction. Instruction of a fourth year class will begin this fall.

Peking has a temperate climate, hotter than New York in summer, considerably colder than

New York in winter, and usually very dry. One does not find here, therefore, the strictly tropical diseases, except as they may be imported from central and south China. In general, the diseases usually met with in the medical wards are less different than one might expect from what is seen in the United States. Tuberculosis, and especially pulmonary tuberculosis, is very common. There are many acute infections of the respiratory tract, but lobar pneumonia is probably somewhat less common than in northern United States. Typhoid fever, in spite of much that is said about the Chinese having an inherited or acquired immunity to it, is common and the mortality is about what we expect in America. Syphilis abounds in all its manifestations. It has been repeatedly stated that syphilis of the central nervous system is rare among the Chinese, but more careful studies have disproved this point, and the extraordinarily interesting neurological clinic in Peking contains its full quota of syphilitic cases. Dysentery, both bacillary and amoebic, occurs with great frequency in the summer and autumn, and malaria, usually the tertian form, is not uncommon. Scarlet fever and small pox are seen often; relapsing fever and typhus fever are not at all unusual; and leprosy is sometimes seen. The infection which appears most often, however, and which is at the same time new to those of us educated in America, is kala-azar. Every patient with a large spleen is suspected of having kala-azar, and four to six patients undergoing treatment in the wards is not unusual. There are many cases of acute and chronic nephritis, similar to what we seen in the west, but one gets the impression that instances of essential hypertension are far less common in China than in America. Simple goitre is endemic in parts of the country around Peking and one sees enormous tumors, but exophthalmic goitre, while it occurs, is rather strikingly unusual. Diabetes, which was also formerly held to be very rare in China, is found quite frequently if routine examinations for sugar are made, but it usually occurs in patients past middle age and runs typically a mild course, the glycosuria disappearing with only slight alteration of diet. Heart disease is common, and the types met

with are usually the chronic myocardial cases in older people, or cases on a syphilitic basis with an aortitis and perhaps a lesion of the aortic valve. Acute rheumatic fever is distinctly uncommon in Peking and as a result rheumatic heart disease is comparatively rarely seen. Cases of beri-beri come to the clinic occasionally, but they almost always occur in patients who have come from the south, for the disease does not seem to be indigenous in North China. Neoplasms, benign and malignant, of all varieties are common and one sees many of them in stages that are more advanced than we are accustomed to nowadays in the west. A cirrhosis of the liver with ascites, said to occur characteristically in farmers, is another interesting and new type of disease entity. Finally, in addition to many cases of organic neurological disease, there are numerous patients with all sorts of neuroses and psychoses. In general, therefore, the medical clinic in Peking is marked particularly by the great variety of disease. One finds most of the diseases that we are accustomed to see in America, and in addition a good many new types.

What makes the clinic especially stimulating and interesting, however, is the possibility of studying the cases carefully. The number of hospital beds available for medical patients is not nearly sufficient to allow all those who apply to the out-patient department and who are in need of institutional care, to be admitted, and a careful selection has to be made. Those who are particularly in need of hospital treatment are, of course, immediately referred to the wards, no matter what they are suffering from, but under other circumstances the principle which determines whether or not a patient shall be admitted depends on the fact that the hospital is essentially a teaching institution. The cases taken into the wards are, therefore, chosen in large part because they are particularly suitable for teaching purposes or because they offer problems for special investigation. The result of this method of selection, which is determined by the size and character of the hospital, is a medical clinic of unusually interesting cases. All of the patients are studied in great detail by the house staff and in many instances special observations are made by

members of the senior staff who may be concerned with the problems presented by individual patients. The various aspects of the cases are then discussed at the daily visits when all the members of the medical department join the house staff in the wards. In addition to these exercises, of a strictly clinical nature, other opportunities are provided to enable the men to keep in touch with the work which is being done by their colleagues in Peking and elsewhere in the medical world. On Saturday mornings the whole staff meets for an hour in the laboratories while one of the members talks to them about his researches, or about some of the broader fields with which he is in close touch; once a fortnight the Medical Society meets for the more formal presentation of papers; and at a similar interval the "Review Club" discusses special topics from the medical literature. The fact that the faculty of the medical school is so large (about forty members, besides assistants in clinics and laboratories), that so much progressive scientific work is being carried on in all departments, and the relations between the departments are so intimate and harmonious, makes it almost impossible for one to be a member of the staff and fall by the professional wayside. To many people in America, China may seem to be remote and Peking an outpost of western civilization, but to those who know the situation the Peking Union Medical College is progressing hand in hand with the foremost medical schools of the world on the frontier of scientific medicine.

FRANCIS W. PEABODY

BOSTON CITY HOSPITAL

A FIRST COURSE IN GENERAL CHEMISTRY¹

THE opportunity to take part in a discussion on the above topic is highly appreciated, particularly because during the past twenty years I have had an exceptional opportunity to try out certain ideas relating to the teaching of general chemistry to first year students at the Phillips Exeter Academy. Since Dr. Gordon stated that I could confine the discussion either

to content or method or both I shall probably avail myself to the limit of this proviso.

Since my main criticism of the majority of papers thus presented has been that the statements have been too general, and that there has been too little of what was definite and capable of being carried away by the listener and put into immediate practice, perhaps I may be allowed to speak rather personally in parts, and to mention existing texts by name.

There stand before me on the desk fourteen of the more modern texts from which the secondary school teacher must usually choose the one to use with his classes. From these, three must reluctantly be dropped out of our consideration. The excellent "Text-book of Chemistry," by W. A. Noyes, is designed for use with college students, although it is so written as to be suitable for college students who have had no chemistry. As I interpret the subject before us to refer to the first year student in chemistry during his period of *preparation for college*, we must consider the large difference in the mental attitude of the student towards his subject manifested in the last years of secondary school and in the early years of college. Vivian's "Every-day Chemistry" and "Chemistry and Its Relation to Daily Life," by Kahlenberg and Hart, must be laid aside because, although they are designed for use in secondary schools, they are adapted particularly to students of agriculture and home economics. Students, should, however, have access to these two texts which show successfully how live and every-day a subject chemistry is.

In this connection it may be interesting to note that at a recent meeting of the New England Association of Chemistry Teachers a textbook survey was made. Of those present about one third used McPherson and Henderson's "Elementary Study of Chemistry," about one third used "Elementary Principles of Chemistry," by Brownlee and Others, while the remaining one third were divided among McFarland's "Practical Elementary Chemistry," Black and Conant's "Practical Chemistry" and Newell's "Chemistry" in about the ratio of 2 : 2 : 1, respectively. I shall have occasion to refer again to these five books, as well as incidentally to the other six before me.

I have never been able to understand why

¹ Paper read before the American Chemical Society at its meeting in April.